DK

ADVARSEL

Modulet må kun tilsluttes af kvalificerede teknikere, som er bekendte med de tekniske udtryk, advarsler og instruktioner i installationsvejledningen, og som vil følge disse.

Hvis der er tvivl om modulets rette håndtering, skal der rettes henvendelse til den lokale forhandler eller alternativt direkte til **PR electronics A/S.**

Installation og tilslutning af modulet skal følge landets gældende regler for installation af elektrisk materiel.

Reparation af modulet må kun foretages af PR electronics A/S.

Transmitterdækslet må ikke fjernes i eksplosionsfarligt område, når kredsløbet er strømførende.

Transmitterdækslet skal være helt lukket for at overholde kravene til eksplosionssikring.

Hvis transmitteren er installeret i områder med kraftige vibrationer, kan det være nødvendigt med ekstra befæstning.

Ved installation i eksplosionsfarligt område skal den tilhørende installationstegning følges nøje.

Vær opmærksom på ikke at frembringe mekaniske gnister, når instrumentet og tilhørende enheder tilgås i eksplosionsfarligt område.

Elektriske specifikationer

Anvendelsestemperatur	
med silikone O-ring	-40°C til +85°C
med FKM O-ring	-20°C til +85°
Reduceret LCD-ydeevne under -20°C og over +70 °C	
Opbevaringstemperatur	-40°C til +85°C
Kalibreringstemperatur	20...28°C
Relativ luftfugtighed	0...100% RF (kond.)
Kapslingsklasse	IP54 / IP66 / IP68 type 4X

Mekaniske specifikationer

Diameter	Ø 110 mm
Mål, H x B x D	109x145x125,5 mm
Vægt, ca.	1,3 kg
Ledningskvadrat	0,13...1,5 mm² / AWG 26...16 flerkoret ledning
Klemskruetilspændings-moment	0,4 Nm
Vibration	IEC 60068-2-6 : 2007
2...25 Hz	±1,6 mm
25...100 Hz	±4 g

Fælles specifikationer:

Forsyningsspænding, DC	
Ex: ia, egensikker	10...30 VDC (12...30 VDC med baggrundsbelysning)
Øvrige	10...35 VDC (12...35 VDC med baggrundsbelysning)
Isolationsspænd., test/oper.	1,5 kVAC / 50 VAC
Langtidsstabilitet	0,1% af span / år

Indgangsspecifikationer:

Indgang for RTD-typer:

Pt50, Pt100, Pt200, Pt500, Pt1000, Ni50, Ni100, Ni120, Ni1000

Kabelmodstand pr. leder (max.)	5 Ω
Følerstrøm	Nom. 0,2 mA

Indgang for TC-typer:

B, E, J, K, L, N, R, S, T, U, W3, W5, Lr

mV-indgang:

Måleområde, spænding	-800...+800 mV
Min. span	2,5 mV
Indgangsmodstand	10 MΩ

Strømudgang:

Signalområde	4...20 mA
Min. signalområde	16 mA
Belastningsmodstand	≤ (Vforsyn. - 10) / 0,023 [Ω]
med baggrundsbelysning	≤ (Vforsyn. - 12) / 0,023 [Ω]
Følerfejlsdetektering, programmerbar	3,5...23 mA
NAMUR NE43 Upscale	23 mA
NAMUR NE43 Downscale	3,5 mA
HART-protolkolrevisioner	HART 7 og HART 5

Direktiver:

EMC	2004/108/EF
ATEX	94/9/EF
RoHS	2011/65/EU

UK

WARNING

Only technicians, who are familiar with the technical terms, warnings, and instructions in the manual and who are able to follow these, should connect the device.

Should there be any doubt as to the correct handling of the device, please contact your local distributor or PR electronics A/S.

Mounting and connection of the device should comply with national legislation for mounting of electric materials.

Repair of the device must be done by PR electronics A/S only.

Do not remove the transmitter cover in explosive atmospheres when the circuit is alive.

The transmitter cover must be fully engaged to meet the explosion proof requirements.

If installed under high-vibration conditions, the transmitter may require supplementary support.

For installation in hazardous area the corresponding installation drawing must be followed in detail.

Take care not to generate mechanical sparking when accessing the instrument and peripheral devices in a hazardous location.

Electrical specifications

Operating tempeature	
with silicone O-ring	-40°C to +85°C
with FKM O-ring	-20°C to +85°C
Reduced LCD performance below -20°C and above +70°C	
Storage temperature	-40°C to +85°C
Calibration temperature	20...28°C
Relative humidity	0...100% RH (cond.)
Protection degree	IP54 / IP66 / IP68 type 4X

Mechanical specifications:

Dimensions	Ø 110 mm
Dimensions, H x W x D	109x145x125.5 mm
Weight approx.	1.3 kg
Wire size	0.13...1.5 mm² / AWG 26...16 stranded wire
Screw terminal torque	0.4 Nm
Vibration	IEC 60068-2-6 : 2007
2...25 Hz	±1.6 mm
25...100 Hz	±4 g

Common electrical specifications:

Supply voltage, DC:	
Ex ia, intrinsically safe	10...30 VDC (12...30 VDC with backlight)
Other	10...35 VDC (12...35 VDC with backlight)
Isolation - test / working	1.5 kVAC / 50 VAC
Long term stability	0.1% of span / year

Input specifications:

RTD input types:

Pt50, Pt100, Pt200, Pt500, Pt1000, Ni50, Ni100, Ni120, Ni1000

Cable resistance per wire (max.)	5 Ω
Sensor current	Nom. 0.2 mA

TC input types:

B, E, J, K, L, N, R, S, T, U, W3, W5, Lr

mV input:

Voltage input range	-800...+800 mV
Min. span	2.5 mV
Input resistance	10 MΩ

Output specifications:

Signal range	4...20 mA
Min. signal range	16 mA
Load resistance	≤ (Vsupply - 10) / 0.023 [Ω]
with backlight	≤ (Vsupply - 12) / 0.023 [Ω]
Sensor error detection, programmable	3.5...23 mA
NAMUR NE43 Upscale	23 mA
NAMUR NE43 Downscale	3.5 mA
HART protocol revisions	HART 7 and HART 5

Directives:

EMC 2004/108/EC	EN 61326-1
ATEX	94/9/EC
RoHS	2011/65/EU

FR

AVERTISSEMENT

Il est conseillé de réserver le raccordement du module aux techniciens qualifiés qui connaissent les termes techniques, les avertissements et les instructions de ce guide et qui sont capables d'appliquer ces dernières.

Si vous avez un doute quelconque quant à la manipulation du module, veuillez contacter votre distributeur local. Vous pouvez également vous adresser à PR electronics SARL.

Le montage et le raccordement du module doivent être conformes à la législation nationale en vigueur pour le montage de matériaux électriques.

Seule PR electronics SARL est autorisée à réparer le module.

Ne retirez pas le couvercle du transmetteur en atmosphère explosive lorsque l'appareil est sous tension.

Le couvercle du transmetteur doit être serré à fond pour être conforme aux exigences d'antidéflagrance.

Dans le cas où le transmetteur est exposé à des fortes vibrations, il peut être nécessaire d'installer un soutien supplémentaire.

Pour l'installation dans les atmosphères explosives, le schéma d'installation correspondant doit être suivi en détail.

Prenez soin de ne pas générer des étincelles mécaniques lors de l'accès à l'appareil et instruments périphériques dans une atmosphère explosive.

Spécifications

Plage d'utilisation	
avec joint en silicone	-40°C à +85°C
avec joint en FKM	-20°C à +85°C
Performance LCD réduit au dessous de -20°C et au dessus de + 70°C	
Température de stockage	-40°C à +85°C
Température de calibration	20...28°C
Humidité relative	0...100% HR (cond.)
Degré de protection	IP54 / IP66 / IP68 type 4X

Spécifications mécaniques :

Diamètre	Ø 110 mm
Dimensions, H x L x P	109x145x125,5 mm
Poids, env.	1,3 kg
Taille des fils	0,13...1,5 mm² / AWG 26...16 fil multibrins
Pression max. avant déformation de la vis	0,4 Nm
Vibration	IEC 60068-2-6 : 2007
2...25 Hz	±1.6 mm
25...100 Hz	±4 g

Spécifications communes :

Tension d'alimentation, cc :	
Ex ia, intrinsèquement sûr	10...30 Vcc (12...30 Vcc avec rétro-éclairage)
Autres	10...35 Vcc (12...35 Vcc avec rétro-éclairage)
Tension d'iso. test/opér.	1,5 kVca / 50 Vca
Stabilité à long terme	0,1% de l'EC / an

Spécifications d'entrée :

Entrée pour types RTD :

Pt50, Pt100, Pt200, Pt500, Pt1000, Ni50, Ni100, Ni120, Ni1000

Résistance de ligne max. par fil	5 Ω
Courant de sonde	nom. 0,2 mA

Entrée pour types TC :

B, E, J, K, L, N, R, S, T, U, W3, W5, Lr

Entrée mV :

Gamme de mesure, tension	-800...+800 mV
Plage de mesure min.	2,5 mV
Résistance d'entrée	10 MΩ

Sortie courant :

Gamme de signal	4...20 mA
Plage de signal min.	16 mA
Résistance de charge	≤ (Valim. - 10) / 0,023 [Ω]
avec rétro-éclairage	≤ (Valim. - 12) / 0,023 [Ω]
Détection de rupture de sonde, programmable	3,5...23 mA
NAMUR NE43 Haut d'échelle	23 mA
NAMUR NE43 Bas d'échelle	3,5 mA
Protocoles HART	HART 7 et HART 5

Directives :

CEM	2004/108/CE
ATEX	94/9/CE
RoHS	2011/65/EU

DE

WARNUNG

Das Gerät darf nur von qualifizierten Technikern angeschlossen werden, die mit den technischen Ausdrücken, Warnungen und Anweisungen in dieser Installationsanleitung vertraut sind und diese befolgen.

Sollten Zweifel bezüglich der richtigen Handhabung des Gerätes bestehen, sollte man mit dem Händler vor Ort Kontakt aufnehmen. Sie können aber auch direkt mit PR electronics GmbH Kontakt aufnehmen.

Die Installation und der Anschluss des Gerätes haben in Übereinstimmung mit den geltenden Regeln des jeweiligen Landes bez. der Installation elektrischer Apparaturen zu erfolgen

Reparaturen des Gerätes dürfen nur von PR electronics A/S vorgenommen werden.

In explosionsgefährdeten Atmosphären den Deckel nicht abnehmen, wenn der Stromkreis unter Spannung steht.

Der Gehäusedeckel muss vollständig geschlossen sein, um die Ex-Schutz-Anforderungen zu erfüllen.

Bei der Installation in Bereichen mit starken Schwingungen, kann das Gerät zusätzliche Unterstützung benötigen.

Bei der Installation in explosionsgefährdeten Bereichen muss die entsprechende Installationszeichnung im Detail beachtet werden.

Vermeiden Sie bei der Arbeit am Gerät und dessen Peripheriegeräte in explosionsgefährdeten Bereichen Funkenbildung durch mechanische Einwirkungen.

Elektrische Daten

Anwendungstemperatur	
mit Silikon-O-Ring	-40°C bis +85°C
mit FKM-O-Ring	-20°C bis +85°C
Reduzierte LCD Leistung unter -20°C und über +70°C	
Lagertemperatur	-40°C bis +85°C
Kalibrierungstemperatur	20...28°C
Luftfeutigkeit	0...100% RF (kond.)
Schutzart	IP54 / IP66 / IP68 Typ 4X

Mechanische Spezifikationen

Durchmesser	Ø 110 mm
Abmessungen, H x B x T	109x145x125,5 mm
Gewicht, ca.	1,3 kg
Leitungsquerschnitt	0,13..1,5 mm² / AWG 26...16 Litzendraht
Klemmschrauben-anzugsmoment	0,4 Nm
Schwingungen	IEC 60068-2-6 : 2007
2...25 Hz	±1,6 mm
25...100 Hz	±4 g

Allgemeine Daten:

Versorgungsspannung, DC	
Ex ia, eigensicher	10...30 VDC (12...30 VDC mit Hintergrundbeleucht.)
Übrige	10...35 VDC (12...35 VDC mit Hintergrundbeleucht.)
Isolationsspannung, Test / Betrieb	1,5 kVAC / 50 VAC
Langzeitstabilität	0,1% d. Messsp. / Jahr

Elektrische Daten, Eingang:

Eingang für WTH-Typen:

Pt50, Pt100, Pt200, Pt500, Pt1000, Ni50, Ni100, Ni120, Ni1000

Leitungswiderstand pro Leiter (Max.)	5 Ω
Sensorstrom	nom. 0,2 mA

Eingang für TE-Typen:

B, E, J, K, L, N, R, S, T, U, W3, W5, Lr

mV-Eingang:

Messbereich, Spannung	-800...+800 mV
Min. Messbereich (Spanne)	2,5 mV
Eingangswiderstand	10 MΩ

Stromausgang:

Signalbereich	4...20 mA
Min. Signalbereich	16 mA
Belastungswiderstand	≤ (VVersorg. - 10) / 0,023 [Ω]
mit Hintergrundbeleucht.	≤ (VVersorg. - 12) / 0,023 [Ω]
Sensorfehlanzeige, Programmierbar	3,5...23 mA
NAMUR NE43 aufsteuernd	23 mA
NAMUR NE43 zusteuernd	3,5 mA

Richtlinien:

EMV	2004/108/EG
ATEX	94/9/EG
RoHS	2011/65/EU

PR electronics A/S
Lerbakken 10
DK-8410 Rønde

Tel. +45 8637 2677
Fax +45 8637 3085
www.prelectronics.com

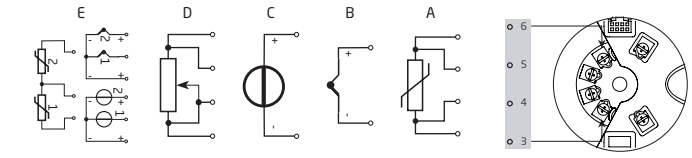
DK Installationsvejledningen for teknikere omfatter følgende produkter: 7501

UK This installation guide for technical personnel covers the following products: 7501

FR Ce guide d'installation pour le personnel qualifié couvre les produits suivants : 7501

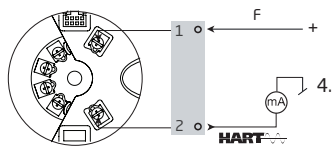
DE Diese Installationsanleitung für Techniker umfasst die folgenden Produkte: 7501

DK Indgangssignaler UK Input signals FR Signaux d'entrée DE Eingangssignale



	DK	UK	FR	DE
A	RTD	RTD	RTD	WTH
B	TC	TC	TC	TE
C	Spænding	Voltage	Tension	Spannung
D	Lin R	Lin R	Lin R	Lin R
E	Differens eller middel; RTD, TC eller mV	Difference, redundancy or average; RTD, TC or mV	Différence, redondance ou moyenne; RTD, TC ou mV	Differenz, Redundanz oder Mittel; WTH, TE oder mV

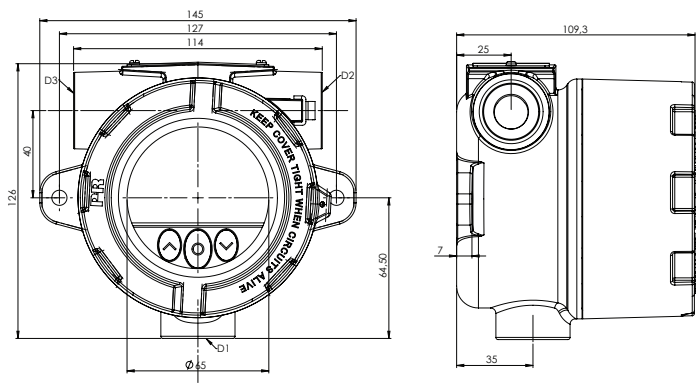
DK Udgangssignal UK Output signal FR Signal de sortie DE Ausgangssignal



	DK	UK
F	Ex: 10...30 VDC (12...30 VDC med baggrundsbelysning) Øvrige: 10...35 VDC (12...35 VDC med baggrundsbelysning)	Ex: 10...30 VDC (12...30 VDC with backlight) Other: 10...35 VDC (12...35 VDC with backlight)
	FR	**DE**
	Ex: 10...30 Vcc (12...30 Vcc avec rétro-éclairage) Autres: 10...35 Vcc (12...35 Vcc avec rétro-éclairage)	Ex: 10...30 VDC (12...30 VDC mit Hintergrundbeleuchtung) Übrige: 10...35 VDC (12...35 VDC mit Hintergrundbeleuchtung

DK Mekaniske specifikationer UK Mechanical specifications FR Dimensions mécaniques

DE Abmessungen

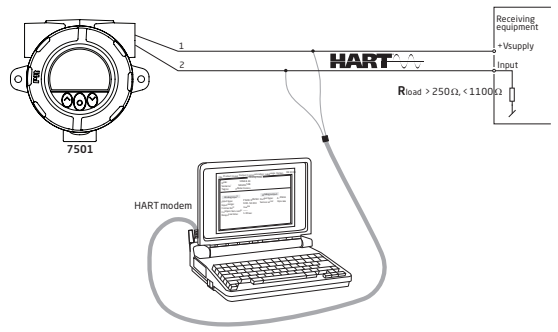


DK Konfiguration med HART modem og PReset PC konfigurationssoftware.

UK Configuration with a HART modem and the PReset software.

FR Programmation avec le modem HART et le logiciel PReset.

DE Programmierung mittels HART Modem und PReset PC Programmierungssoftware.

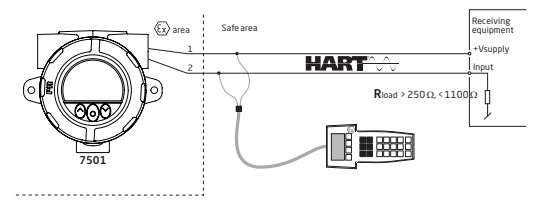


DK Konfiguration med HART kommunikator indeholdende 7501H5 eller 7501H7 DD driver.

UK Configuration with a HART compliant handheld communicator having the 7501H5 or 7501H7 DD driver installed.

FR Programmation avec le communicateur HART chargé avec le pilote DD 7501H5 ou 7501H7 DD.

DE Programmierung mittels HART Datenaustauschgerät mit 7501H5 oder 7501H7 DD-Antrieb.



DK Mærkning UK Marking FR Marquage DE Markierung

DK Når modulet installeres som Ex ia, ic, d, nA eller tb, skal der på topskiltet sættes en kørnerprik til markering af den anvendte installationstype.

UK When this product has been installed as Ex ia, ic, d, nA or tb, use a punch marker in the appropriate box to indicate the type of installation on the top label.

FR Lorsque ce produit a été installé comme Ex ia, ic, d, nA ou tb W, utiliser un poinçon à marquer dans la case appropriée pour indiquer le type d'installation sur l'étiquette.

DE Wenn dieses Produkt als Ex ia, ic, d, nA oder tb installiert ist, nutzen Sie bitte die entsprechenden Felder auf dem Top-Label, um die Art der Installation zu kennzeichnen.

DK Sideskilt

UK Side label

FR Etiquette

DE Typenschild

DK Typenr.
UK Type no.
FR No. de type.
DE Typennr.

DK Produktionsår fremgår af de to første cifre i serienummeret.
UK Year of manufacture can be taken from the first two digits in the serial number.
FR L'année de production est définie grace aux deux premiers chiffres du numéro de série.
DE Die ersten beiden Ziffern der Seriennummer geben das Produktionsjahr an.

DK Godkendelser UK Approvals FR Homologations DE Zulassungen

DK
Dokumentation, godkendelser og yderligere information findes på internettet på **www.prelectronics.dk**

UK
Documentation, permits and other information can be found on the internet at **www.prelectronics.com**

FR
La documentation et toute autre information peuvent être trouvées sur l'Internet sur notre site: **www.prelectronics.fr**

DE
Dokumentationen, Zulassungen und andere Informationen können auf unserer Internet-Seite unter **www.prelectronics.de** gefunden und abgerufen werden.

BR
Documentações, licenças e outras informações podem ser encontradas no site **www.prelectronics.com**

DK Godkendelser UK Approvals FR Approbations DE Zulassungen BR Aprovações

Product	ATEX	Area / Zone	Installation drawing	IECEx	Area / Zone	Installation drawing	FM	Zone / Div.	Installation drawing	EAC / EAC Ex
7501xxxxxx2	DEKRA 15ATEX0058 X	0, 1, 2, 20, 21, 22	7501QA01	DEK 15.0039 X	0, 1, 2, 20, 21, 22	7501QI01	3055380	0, 1, 2 / Div. 1/ 2	7501QF01	EAC

FM Installation drawing 7501

For safe installation of 7501 the following must be observed. The module shall only be installed by qualified personnel who are familiar with the national and international laws, directives and standards that apply to this area.

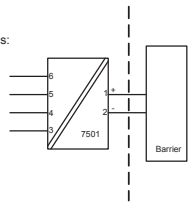
Intrinsic safe installation:

Non classified Location

Hazardous classified Location
Class I,II,II Division1 Groups, ABCDEFG
Class I, Zone 0, IIC, Zone 20

T4: -40 ≤ Ta ≤ 85ºC
T5: -40 ≤ Ta ≤ 60ºC
T6: -40 ≤ Ta ≤ 40ºC

Zone 20 Temperature Class:
-40 ≤ Ta ≤ 85ºC T100 ºC
-40 ≤ Ta ≤ 60ºC T75 ºC
-40 ≤ Ta ≤ 40ºC T60 ºC



Terminal: 1,2
Ui: 30 VDC
Ii: 120 mA
Pi: 0.84 W
Li: 0 µH
Ci: 2 nF

The barrier must not be connected to any associated apparatus which uses or generates more than 250 VRMS

Terminal: 3,4,5,6
Uo: 9.6 VDC
Io: 28 mA
Po: 67 mW
Lo: 35 mH
Co: 3.5 µF

UM < 250V
Voc or Uo < Vmax or Ui
Isc or Io < Imax or Ii
Po < Pi
Ca or Co > Ci + Ccable
La or Lo > Li + Lcable

The entity concept

The Transmitter must be installed according to National Electrical Code (ANSI-NFPA 70) and shall be installed with the enclosure, mounting, and spacing segregation requirement of the ultimate application.

Equipment that is FM-approved for intrinsic safety may be connected to barriers based on the ENTITY CONCEPT. This concept permits interconnection of approved transmitters, meters and other devices in combinations which have not been specifically examined by FM, provided that the agency's criteria are met. The combination is then intrinsically safe, if the entity concept is acceptable to the authority having jurisdiction over the installation.

The entity concept criteria are as follows:

The intrinsically safe devices, other than barriers, must not be a source of power.
The maximum voltage Ui(V_{MAX}) and current Ii(I_{MAX}), and maximum power Pi(Pmax), which the device can receive and remain intrinsically safe, must be equal to or greater than the voltage (Uo or V_{OC} or V_t) and current (Io or I_{SC} or I_t) and the power Po which can be delivered by the barrier.

The sum of the maximum unprotected capacitance (C_i) for each intrinsically device and the interconnecting wiring must be less than the capacitance (C_a) which can be safely connected to the barrier.

The sum of the maximum unprotected inductance (L_i) for each intrinsically device and the interconnecting wiring must be less than the inductance (L_a) which can be safely connected to the barrier.

The entity parameters Uo,V_{OC} or V_t and Io,I_{SC} or I_t, and C_a and L_a for barriers are provided by the barrier manufacturer.

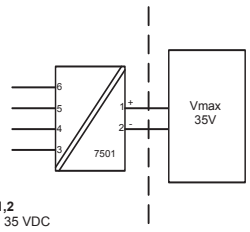
For Class II and Class III installations where rigid conduit is not used, seal cable entries against dust and fibres using a NRTL listed cable gland fitting.

Non Incendive installation:

Hazardous classified Location
Class I,II,III ,Division 2, Groups, ABCDFG
Class I, Zone 2, IIC

Non classified Location

T4: -40 ≤ Ta ≤ 85ºC
T6: -40 ≤ Ta ≤ 60ºC



Terminal: 1,2
Vmax: 9.5 - 35 VDC

Terminal: 3,4,5,6
Sensor: RTD or TC

O-ring Sealings
Silicone rubber:-40°C ≤Ta ≤ +85°C
FKM rubber: -20°C ≤Ta ≤ +85°C

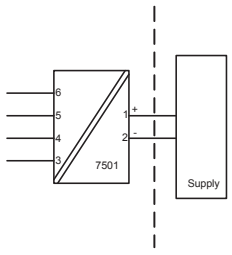
Protection: Indoor and Outdoor TYPE 4X or IP66

Explosion proof / Dust ignition proof installation:

Hazardous area
Class I, II, III Division 1, Groups ABCDEFG
Class I Zone 1, Ex/AEx d IIC T6

Non Hazardous Area

T6: -20/-40 ≤ Ta ≤ 70ºC
T5, T4: -20/-40 ≤ Ta ≤ 85ºC



Terminal: 1,2
Supply: 9.5-35 VDC
Current: 23 mA

Terminal: 3,4,5,6
Sensor: RTD or TC

O-ring Sealings
Silicone rubber:-40°C ≤Ta ≤ +85°C
FKM rubber: -20°C ≤Ta ≤ +85°C

Protection: Indoor and Outdoor Type 4X or IP66

Explosion proof / Dust ignition proof installation.

The enclosure must be installed such, that even in the event of rare incidents, ignition sources due to impact and friction, sparks are excluded.

Unused cable entries must be sealed by approved sealing plugs.

Certified cable and cable glands shall be used that are suitable for the application and correctly installed or the cables must be run in conduit.

For an ambient temperature exceeding 70 °C, heat resistant cables and cable glands suitable for at least 90°C shall be used.

For process temperatures above 85°C or below -20/-40°C installer must verify by measurements that the service temperature of the 7501 module is held within this range taking worst conditions into account.

The display cover must be screwed all the way in and the safety catch must be fastened before operation.

Protection degree of IP 66 or TYPE4X is only achieved if certified cable glands or conduit entry devices are used that are suitable for the application and correctly installed with sealing washers or Loctite sealant is added to the threads of the sensor, blanking elements and cable glands.

The enclosure must be connected to the potential matching line.

Warning.
Do not open display cover unless area is known to be safe.

For installation in Canada the following must be taken into account:
All openings for conduit and sensor connection must be in NPT threads.
For Class I Group A installation, conduit seal is required within 18 inches of enclosure.
For Class I Zone I installation, conduit seal is required within 18 inches of enclosure.